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FOR MEDICAL EDUCATION

WORLD
CONFERENCE
on
MEDICAL
EDUCATION

REPORT

EDINBURGH

7-12 August

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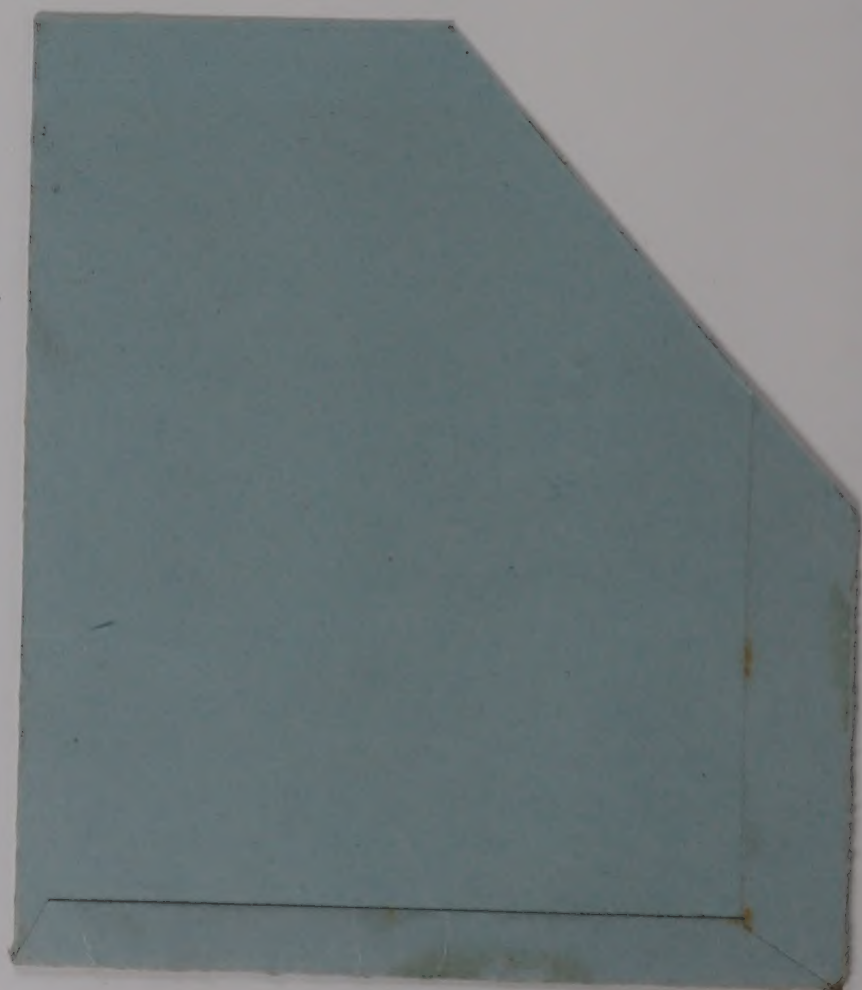


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THE EDINBURGH DECLARATION

The aim of medical education is to produce doctors who will promote the health of all people, and that aim is not being realized in many places, despite the enormous progress that has been made during this century in the biomedical sciences. The individual patient should be able to expect a doctor trained as an attentive listener, a careful observer, a sensitive communicator and an effective clinician; but it is no longer enough only to treat some of the sick. Thousands suffer and die every day from diseases which are preventable, curable or self-inflicted, and millions have no ready access to health care of any kind.

These defects have been identified for a long time, but efforts to introduce greater social awareness into medical schools have not been notably successful. Such facts have led to mounting concern in medical education about equity in health care, the humane delivery of health services, and the overall costs to society.

This concern has gathered momentum from national and regional debates which have involved large numbers of individuals from many levels of medical education and health services in most countries of the world, and has been brought into sharp focus by reports which followed from the six regions of the world and which address the basic issues. It also reflects the convictions of a growing number of doctors in teaching and clinical practice, other health professionals, medical students, and the general public.

Scientific research continues to bring rich rewards; but man needs more than science alone, and it is the health needs of the human race as a whole, and of the whole person, that medical educators must affirm.

Many improvements can be achieved by actions within the medical school itself, namely to:

1. Enlarge the range of settings in which educational programmes are conducted, to include all health resources of the community, not hospitals alone.
2. Ensure that curriculum content reflects national health priorities and the availability of affordable resources.
3. Ensure continuity of learning throughout life, shifting emphasis from the passive methods so widespread now to more active learning, including self-directed and independent study as well as tutorial methods.
4. Build both curriculum and examination systems to ensure the achievement of professional competence and social values, not merely the retention and recall of information.

5. Train teachers as educators, not solely experts in content, and reward educational excellence as fully as excellence in biomedical research or clinical practice.
6. Complement instruction about the management of patients with increased emphasis on promotion of health and prevention of disease.
7. Pursue integration of education in science and education in practice, also using problem solving in clinical and community settings as a base for learning.
8. Employ selection methods for medical students which go beyond intellectual ability and academic achievement, to include evaluation of personal qualities.

Other improvements require wider involvement in order to:

9. Encourage and facilitate co-operation between the Ministries of Health, Ministries of Education, community health services and other relevant bodies in joint policy development, programme planning, implementation and review.
10. Ensure admission policies that match the numbers of students trained with national needs for doctors.
11. Increase the opportunity for joint learning, research and service with other health and health related professions, as part of the training for team-work.
12. Clarify responsibility and allocate resources for continuing medical education.

Reform of medical education requires more than agreement; it requires a widespread commitment to action, vigorous leadership and political will. In some settings financial support will inevitably be required, but much can be achieved by a redefinition of priorities, and a reallocation of what is now available.

By this Declaration we pledge ourselves and call on others to join us in an organised and sustained programme to alter the character of medical education so that it truly meets the defined needs of the society in which it is situated. We also pledge ourselves to create the organisational framework required for these solemn words to be translated into effective action. The stage is set; the time for action is upon us.

12 August 1988

World Conference on Medical Education of the World Federation for Medical Education
sponsored by

World Health Organisation, United Nations Children's Fund, United Nations Development
Programme, City of Edinburgh, Lothian Regional Council, Scottish Development Agency.



Professor Sharifah Shahabudin, The Lord Provost Rt. Hon. Eleanor McLaughlin and Professor Henry Walton after the reading of the Edinburgh Declaration.

Photograph by courtesy of The Evening News, Edinburgh



BACKGROUND

MOBILIZING WORLD OPINION

The World Federation for Medical Education was founded in 1972, and in 1984 the Presidency passed to Professor Henry Walton. Because of a sense of the growing concern on the part of teachers, other practising doctors, medical students and the general public about the deficiencies in medical education, he made the proposal to institute a world-wide study to discover views of leading medical educators about the changes that had to be made to bring about significant improvement in the training of doctors.

The Programme and strategy for world action in medical education.

In 1984 the World Federation for Medical Education, as the international body recognised as the representative of medical education, therefore began undertaking a worldwide assessment of all stages in the training of doctors. The enquiry aimed to result in major recommendations for making medical education congruent with the needs of contemporary societies and with the health goals of communities. The goal was to achieve adoption of an internationally agreed approach in medical education, subscribed to by institutions responsible for the training of medical doctors, and the framing of an influential and generally accepted policy about the tasks and responsibilities for which future doctors must be trained. ¹

A foremost component in the Programme was to be the planning and conducting of an invitational World Conference, and it was scheduled for 8-12 August 1988 in Edinburgh. It was intended to be a working Conference, attended by selected participants, with careful prior planning and documentation leading up to an action plan adopted at the conference.

Six Themes

In order to assure focussed and productive discussion nationally and internationally, the Planning Commission of the World Federation, with members from several regions, issued a document, consisting of six theme papers which highlighted the key issues, and posed specific questions that needed to be answered in order to address the central problems. ² This "Six Themes" document was translated widely and was distributed to most countries. No specific actions were formulated in the document; rather it was so designed that doctors themselves, and those who educate and train them, should participate actively in discussing the problems identified in Medical Education as answers to questions posed under the six themes.

National Reports

Informative and telling national reports, based in most cases on the input of institutions, National Associations for Medical Education or corresponding bodies, and national conferences were received from countries in response to the issues raised in the Six Themes document.

Regional Conferences

The national reports were analysed by the Regional Associations and regional discussion documents were compiled for further intensive consideration at Regional Conferences.

The Regional Conferences took place as follows:-

European Conference:

Dublin, September 1987

African Conference:

Brazzaville, October 1987

South-East Asia Conference:

New Delhi, November 1987

Eastern Mediterranean Conference:

Amman, April 1988

Western Pacific Conference:

Kuala Lumpur, March 1988.

In the Americas a different strategy was employed with a central coordinating group which synthesised national and sub-regional reports originating in 18 countries.

The Regional Reports were then submitted to the WFME office where they were closely studied, and an astonishing degree of unanimity was found. A World Report was prepared from the Regional Reports, was approved by the Planning Commission and was transmitted to delegates some weeks before the World Conference.

In addition there was an exploration of a seventh theme "The Medical School as a Social Organization" in order to throw some light on resistance to change within the medical school.

The World Federation also participated in international conferences on the following:

Assessment of Clinical Competence⁵

Ottawa,
July 1985 and June 1987.

Continuing Medical Education⁴

Eisenhower Centre,
Palm Springs,
December 1986 and February 1988.

Medical Manpower^{5,6}

Acapulco, July 1986.

It also set up an ongoing expert group on Problem-Based Learning starting with a Conference in Dundee in October 1987.

Particular attention was paid to Resolution 37.31 of the World Health Assembly on mobilising universities as resources for the health of populations in which they are situated.^{6,7}

Through the good offices of the Annenberg Centre, Palm Springs, California, the Planning Commission and the Executive Committee on repeated occasions were able to have Teleconferences by satellite, each of which lasted between 1 1/2 and 2 hours.

Collaboration with the World Health Organization.

All planning of the total programme was closely coordinated with the World Health Organization, through the Division of Health Manpower Development (HMD), Geneva. The World Federation was represented at all meetings of the Executive Board of WHO, and as many as possible of the annual Regional Committees of the WHO Regional Offices. There was thus a close association with the Director-General and the Deputy Director-General, and with the six Regional Directors and their HMD staff. The progress of the Programme was regularly reported to the Executive Board of WHO and to the World Health Assembly.

The Director-General of the World Health Organization and all Regional Directors were fully appraised of the plans and strategies, and their advice was much valued. An undertaking to support the programme was sought and obtained from the Headquarters of WHO and all the Regional Offices, with WHO a co-sponsor of the Regional Conferences and World Conference.

Collaboration with UNESCO and UNICEF

The President of WFME was invited to visit the Director-General of UNESCO shortly after Dr. Federico Mayor took office, and the participation of UNICEF was gained through approaches to Mr James Grant by the President and Dr V. Ramalingaswami.

Collaborations in Scotland

The President and the staff of the WFME Central Office were in frequent consultation with the former Principal and Vice-chancellor of the University, Sir John Burnett, and his successor Sir David Smith. The Lord Provost of Edinburgh, Rt. Hon. Eleanor McLaughlin and the staff of the City of Edinburgh District Council, similarly participated closely in planning for the World Conference. Considerable support was given by the City of Edinburgh and the Scottish Development Authority, the Scottish Health Education Group and the Common Services Agency

The World Conference

The World Conference, long planned to be held on 7-12 August 1988, had been based on the great volume and worldwide coverage of preparatory work already completed. It was invitational, and was charged to review intensively the condensation of the Regional Reports received from the six Regional Associations and other pertinent documentation. The objectives to be achieved at the World Conference were the following:

- (1) Participants would have had an ample opportunity to express their views on the Six Themes, and on other items which seemed relevant to the formulation of broad policies for the conduct of medical education.
- (2) These views would have been summarised and synthesised into a set of nationally relevant educational principles and practices that should characterise the programme of medical education, and against which individual institutions could judge their present status and future progress.
- (3) A mechanism for worldwide dissemination of these policies and strategies would have been established.
- (4) A follow-up plan would have been formulated, to promote the accepted practices to be incorporated into institutional programmes over the ensuing five years, or incorporated in action plans for the subsequent decade.

While these preparations proceeded, two other developments were also taken forward.

Ministerial Consultations

As so many of the recommendations emerging have legal, legislative and statutory implications, there had to be a crucially important further development in relation to the World Conference. Ministerial Consultations are being called at Regional level, to be attended by the Ministers of Health, Ministers of Education, health-care administrators and medical educators. The Ministerial Consultation for Europe, for example, will be at the Gulbenkian Foundation, Lisbon, under the auspices of the Minister of Health and the the Minister of Education of Portugal; the

Regional Director of the WHO European Office and the President of WFME will be associated in making the invitations. The Minister of Health and the Minister of Education in Nigeria, both of whom happen to be medical doctors, will take the initiative in the African Region, with the Carnegie Corporation as sponsors. The Minister of Health of India will assist in South-East Asia, and the Minister of Health for Mexico in the Americas. The Western Pacific Ministerial Consultation will be assisted by Y Data Chan Siang Sun of Malaysia.

The Implementation Phase

The Central Office which planned the World Conference, having been given new responsibilities by the Conference decisions, will continue as the base for the Implementation Phase; the Executive Committee of WFME has the task of planning follow-up strategies for implementation of the recommendations of the World Conference. This follow-up mechanism is of course a crucial component of the programme, in which Regional Associations will be fully implicated. Its activation by the World Conference will be the key to the effectiveness of promoting programmes in training the doctors of the future and improving the health care of populations.

The recommendations of the World Conference will be presented to the World Health Organization's Executive Board in January 1989. By then, the Implementation Phase of the Federation's Programme will already be advanced. The Ministerial Consultations are an essential component of the Implementation Phase. The recommendations may then go to the World Health Assembly at its meeting in Geneva in May 1989.

It is expected that the Edinburgh Declaration will have the influence in medical education which the Alma-Ata Declaration has had in the field of health care.

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The Questions Asked
and
The Answers Given

The Six Themes

Being an extract from the World Conference Document

(condensed from the six Regional Reports)

THE SIX THEMES

1 EDUCATIONAL PRIORITIES FOR MEDICAL SCHOOLS

The growth of medical knowledge, and the vast differences between nations in resources for health care, demand a re-examination of the priorities, principles and purposes of medical schools. What knowledge should they impart in the time available? Should their emphasis be on scientific training of the mind, or on preparation for delivering a service? Should they prepare doctors ready to practise independently on graduation, or simply those who are ready for further postgraduate training? Will their graduates work single-handed or as part of a complex system? Will they deal with the health needs of individuals or of communities and populations? What are those needs now?

The diversity of nations requires different answers in different parts of the world, and solutions of the past or of one country may not be cost-effective in another time or place. A fundamental review of priorities is required.

1.1. SCIENCE OR SERVICE?

Should medical school education give primary attention to the science of medicine or to the services that graduating doctors must provide?

Summary

Regions with many developing countries stress service needs (because on graduation doctors must immediately undertake clinical responsibility) while those with more developed countries stress the importance of maintaining a strong science component and developing scientific thinking. All Regions agree that a balance of service and relevant science requirements are essential. In addition, however, there is a need for assuming that students achieve a wide range of professional and personal skills, attitudes and values.

Recommendation

The science component of medical education must be reviewed for its applicability to health care and medical practice.

Actions Required

Review the present content of biomedical science for quality and appropriateness.
Integrate science teaching with service teaching.
Require medical students to design and carry out some scholarly project, in order better to relate scientific thought to service

1.2. COMPETENCE IN PREPARATION FOR FURTHER LEARNING

What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school in preparation for further learning?

Summary

All Regions agree that medical students must not only acquire core knowledge but also must learn how to learn, as well as the ability and desire to work independently.

Recommendation

Medical students must be helped to acquire the habit of life-long learning.

Actions Required

Require all students to demonstrate the capacity for self-directed learning, e.g. the use of all resources available in the community as well as libraries, multi-media resources and computers etc. Evaluate each student's ability to identify health issues and pursue effective enquiry.

1.3. COMPETENCE IN INDIVIDUAL DIAGNOSIS and MANAGEMENT

What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school in individual diagnosis and management of illness?

Summary

Students have to learn to listen to patients attentively, to look at them with the intensity of the trained observer, and how to communicate well with patients, relatives and other health professionals. They must also learn to prevent and treat common disorders, to keep clear and accurate records, to handle common emergencies and also about rehabilitation. They must learn to recognise when they must seek help from others.

Recommendation

Curricula must be designed to ensure that students have the opportunity to achieve the above.

Actions Required

Define the essential core of knowledge and professional competence which is required in particular regions and in more local contexts.

1.4. COMPETENCE IN COMMUNITY HEALTH

What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school in promotion of health and prevention of disease at community level?

Summary

Students must have demonstrated competence in the following fields: local, regional and global epidemiology; the effect of lifestyle on health; health promotion, health management, health education; community health, preventive medicine and the inter-relation of health and economics. These abilities can, and should, be specified in terms of what graduates will actually be equipped to do as newly qualified doctors.

Recommendation

Students must acquire the ability to promote health as well as deal with disease, not only in individuals but also in populations.

Actions Required

Reorient teaching and learning in a manner that addresses both individual and community health goals.

1.5. COMPETENCE IN COLLABORATION

What are the minimum acceptable competences to be demonstrated at the time of graduation from medical school in collaboration with other health workers?

Summary

All the Regions recognise that health care is increasingly the responsibility of teams. To function in such a context, doctors require skills in interpersonal communication and group dynamics, and an ability to collaborate optimally with colleagues in all health related professions, whether as leader or participant.

Recommendation

The medical curriculum must be reoriented to ensure that medical graduates learn to work effectively as members of a team.

Actions Required

Review curricula to ensure that medical students have an opportunity to learn the complementary expertise of other health professionals, and to acquire management skills. Assess student acquisition of ability to function as members of health care teams, where they may or may not be the leader. Review corresponding curricula for the other health professions and particularly with consideration of joint learning experiences.

2 EDUCATIONAL STRATEGIES FOR MEDICAL SCHOOLS

If the priority of a medical school is to impart a defined body of knowledge to its students, the lecture, the textbook and the type of examination which tests retention and recall may be sufficient; but these traditional strategies come under strain when faced by the growth of knowledge and the development of new subjects. The traditional organisation of teaching according to discipline demands that the student integrate diverse aspects of a subject taught in widely different times and places, a demand which is not always met. Yet attempts to teach in a more integrated way, according to body systems or diseases for example, makes considerable demands of staff and organisation and have not yet become widespread.

Many medical schools will consider that the growth of knowledge now renders it a priority to be able to continue to add to one's knowledge throughout life. If this habit is to be acquired in medical school, more active, self-directed strategies of learning may well be required.

However, medicine requires also the ability to use knowledge, to make decisions and to take action often in the absence of complete knowledge. Such actions may well be guided more by attitudes and values, sometimes unconscious, acquired both within and outside the medical school. How are these skills to be developed? Even more, how shall they be assessed?

Such tasks might be daunting even for highly trained educationalists; yet most medical teachers have received no formal instruction about how to teach, nor are they assessed on their ability to do so. Thus there is little incentive, apart from personal satisfaction, for improving their abilities in this field.

Finally, the growing sophistication of medical technology has led to a concentration of teaching in major teaching hospitals associated with medical schools, rather than in the settings in which most patients encounter health care, where the patterns of health and intervention may be quite different and call for very different educational strategies.

2.1. CONTENT, SKILL, ATTITUDES and VALUES

Shall medical school education be dominated by the effort to transmit biomedical content, or shall equal attention be given to the acquisition of professional skills, attitudes and values?

Summary

All Regions agree that biomedical knowledge and the acquisition of professional skills, attitudes, and values are interdependent.

Despite this, as the American Report observes: "The contents of the curricula - in terms of knowledge, skills and attitudes - is selected in general according to isolated perceptions of the teachers in the areas of their own disciplines without interchange with colleagues of different disciplines."

Many of the components will be country and Region-specific.

"Attitudes and values may be culture-bound and a reflection of the ethos of the society" (African Regional Report).

Recommendation

Students must acquire the knowledge defined as necessary for future professional competence, and those skills, attitudes, and values which ensure the translation of competence into performance.

Actions Required

Reorient instructional programs so that professional skills, attitudes and values receive the same attention as biomedical knowledge.

Utilize assessment methods that monitor the acquisition of skills, attitudes and values, as well as knowledge. Return to a position of primacy the maintenance of idealism, which should characterize medical education but is currently thought to be eroded by present educational experiences.

Recognize and make an effort to exploit experiences other than those designed by medical faculties that influence medical students during their training.

2.2. ACTIVE or PASSIVE LEARNING

Shall the instructional process be one that is dominated by active learning opportunities, or those not so demanding of autonomous initiative by the student?

Summary

All Regions noted the overdependence of formal education on didactic teaching. More active and self-directed learning was cited as a universal priority. Problem-based learning, which all Regions advocate, is one means of achieving this goal.

Recommendation

Active learning opportunities should dominate medical education.

Actions Required

Reduce substantially the number of hours devoted to didactic instruction.

Introduce problem-oriented learning in all phases of medical education.

Initiate further research to document the cost and effectiveness of problem-oriented instructional methods.

2.3. ASSESSMENT METHODS

Shall examinations and other evaluation procedures be directed primarily towards assessment of the knowledge students have acquired, their ability to use knowledge, or to their proficiency in a broader range of professional competences?

Summary

Examinations and other assessment procedures must address acquisition of the broad range of professional competences required of doctors. Validity is the cardinal requirement of such appraisals; reliability and objectivity are also of important consideration. Both formative assessment (emphasizing progress), and summative assessment (emphasizing product), are necessary to assess performance.

Recommendation

Valid and appropriate means of measurement, relevant to the competences required at the particular stage of training, must be introduced into medical education to assess the broad range of professional competences.

Actions Required

Review current examination systems to determine whether they address the range of requirements for effective professional performance.

Introduce new methods of proven value to replace invalid procedures now so widely employed.

Continue research on techniques of assessing competence as a routine part of the curriculum.

Investigate the place of patient simulation exercises, the Objective Structured Clinical Examination (OSCE), open-text examinations to foster reference skills, oral examinations, etc. in addition to more traditional multiple choice and essay examinations.

Emphasise problem-solving skills, rather than simply the acquisition of knowledge, in all assessment systems.

2.4. THE ABILITY OF TEACHERS

Do medical schools need to require or encourage or reward teaching staff members to become increasingly familiar with, and skilled in the use of a wide range of educational strategies and tactics?

Summary

The teaching responsibility of medical faculty members has a lower priority than research and patient care. Improvement in their teaching skills is fundamental to improvement of the overall process of training doctors and should be a basic requirement for appointment and promotion.

"A mechanism to stimulate the staff to take part in

these educational programmes must be found” (American Report).

The importance of instruction in local languages is insisted upon by some countries.

Recommendation

Teaching ability must be adequately rewarded and performance indicators of educational competence must be identified. All medical educators must be trained in the full range of instructional methods, with emphasis upon those that facilitate active learning.

Actions Required

Develop further and systematically use methods for evaluating the performance of medical educators.

Institute formal programs to improve the quality of teaching (e.g. courses in education, mandatory teacher certification, refresher courses etc.)

Develop incentives that recognise and reward quality teaching in medical schools; increased academic recognition, promotion and remuneration should mark demonstrated educational ability.

2.5. SETTINGS

What shall be the type of settings for medical education when the aim is to produce graduates capable of dealing successfully with the common problems of health and illness?

Summary

All Regions recognized that doctors will function in many settings (primary, secondary, and tertiary care). The third, however, is over-represented in medical education at present. In each setting there must be a critical number of experienced and dedicated teachers, all of whom must be oriented to the primary health care concept of medicine.

Recommendation

All medical students must be exposed to a broad range of learning environments that should range from rural health districts in the field to the urban tertiary care institutions.

Actions Required

Determine, on the basis of regional and national health care needs what proportion of the educational experience should take place in each setting. Much of the teaching should take place in the community.

Identify mechanisms for dealing with the practical problems of bringing about this radical shift in the setting for medical education; decide how to incorporate facilities and resources in the community, particularly those where the first contact with the patient is occurring, and train teaching staff to accomplish this.

2.6. MONITORING

What mechanisms need to be instituted to monitor and record the implementation by educational bodies of the strategies that have been agreed upon?

Summary

In addition to recognizing the need for change all Regions cited the imperative to monitor that change. Such monitoring and evaluation must be multi-tiered including scrutiny at faculty, local community, national, and Regional levels. The information from these evaluations must be published to ensure the diffusion of information and ideas.

Recommendation

Monitoring the required changes in the three phases throughout medical education will require a mechanism to be set up with appropriate mechanisms for quality control and for guiding future progress.

Actions Required

Establish monitoring bodies at various levels.

Define indicators to assess the changes advocated.

Define a plan of action and a time frame that incorporates appropriate action research.

Publish findings through the relevant bodies best equipped for disseminating these data (e.g. WFME, the Regional Associations, the Network for Community-Oriented Institutions for the Health Sciences, and WHO).

3 SUPPORTING RESOURCES

Medical schools vary in their resources yet there are few guidelines as to minimal or optimal personnel, facilities or financial support.

Both the quantity and the quality of teachers require further definition, and full-time teaching staff have a crucial role in providing individual counsel, guidance and feedback. If the productivity of such staff is to be high, the support of secretaries, technicians, laboratory staff and others will be required.

Accommodation for classes, particularly for laboratory work and clinical teaching in hospital and community, is sometimes inadequate or inefficiently used, and may bear little relation to the settings in which graduates will work.

Library facilities, crucial for any medical school, are undergoing a revolution of networking and information technology which requires re-thinking as to what are essential resources.

Financial support, often derived largely from the state, depends on earlier decisions about priorities both within and beyond the medical school, and the advice of an international organisation may be valuable in defining basic needs. The proportion of operating costs which can be met from tuition fees is

controversial and has significant effects on the type of student recruited.

3.1. A FULL-TIME NUCLEUS?

Is a nucleus of teaching staff who have full-time appointments required for a sound programme of medical education?

Summary

Here full-time teaching staff is taken to mean those whose time commitment and personal interests are predominantly to, and remuneration is predominantly from the medical school. All Regions agreed on the importance of a significant core of such full-time teachers, but some Regions have also noted the financial impediments to attracting and maintaining such a group.

Recommendation

All medical schools must have a core of teachers with full-time appointments, supplemented and complemented by part-time staff who also engage in other activities (private practice, laboratory duties, research etc.)

Actions Required

Determine what percentage of teachers should hold full-time appointments. Identify the conditions required to attract and maintain them.

Develop criteria (in addition to the traditional reliance on research achievements) that will be used for evaluating medical teachers for promotion.

Identify funding sources (governmental, non-governmental organizations and industry) to ensure that such a nucleus of teachers can be recruited and sustained.

Identify ways in which part-time teachers can be attracted to and used to the greatest advantage.

3.2. THE STUDENT-TEACHER RATIO

Can a minimal and/or optimal student:full-time teacher ratio be suggested?

Summary

Ratios considered necessary, and failing these, minimal ratios which permit teaching, are dependent upon teaching methodology, will vary with the needs of the discipline, and with the educational setting. Nevertheless, three Regional reports suggested a minimal ratio of approximately 10 students to 1 full-time teacher and an optimal ratio of 5 to 1. All Regions agreed that the teacher-student ratio needs to be greater during the clinical component of medical education.

Recommendation

Medical schools should attempt to establish student-full-time teacher ratios of 5 to 1 with the recognition that such numbers are inevitably arbitrary and a degree of flexibility has to be accepted.

Actions Required

Review institutional needs and resources as a basis for determining numbers of teachers and of students. Identify a target date for achieving the agreed goal.

3.3. THE RATIO OF SUPPORTING PERSONS

What ratio of supporting personnel would be acceptable?

Summary

There were varying definitions of "supporting personnel," and varying needs according to instructional method and setting. Consequently it was impossible to find a unified, coherent answer to this question.

Recommendation

Although it is impossible to state specific ratios the number of supporting personnel should be such that the instructional efficiency and effectiveness of the medical teachers can be maximised.

Actions Required

Identify direct and supportive instructional roles that can be filled by other than medical faculty members. Recruit such individuals and arrange for their introduction into the educational programs.

3.4. TUITION CHARGES

What portion of operational support to students can be derived from tuition charges to students?

Summary

All Regions agreed that tuition charges will vary depending upon governmental policy. The African report noted charges varying from 0 - 50% but stated that economic constraints will lead to calls for greater individual and parental sacrifice in the future. Another Regional Report emphasized that requiring some student contribution is reasonable but noted the potential danger of high tuition charges creating an inbred medical elite.

Actions Required

Evaluate strategies for establishing and keeping student tuition charges at a level which ensures equitable entry opportunity for future doctors from all sectors of the community.

Determine the role that the state, national service requirements, non-governmental organizations and private contributions should play in funding medical education.

Determine how such schemes affect the quality of intake and the long-term consequences (e.g., over-specialization to pay back student loans, over-production of doctors, etc.).

Reject ability to pay as a significant criterion for admission to medical school.

3.5. FACILITIES and STUDENT NUMBERS

Is there a minimum acceptable description of basic science and clinical facilities in terms of specific student numbers?

Summary

Traditionally each discipline has determined its teaching requirements (including lecture rooms, seminar rooms, laboratories, hospital facilities, diagnostic tools, and community-based facilities) which vary with teaching methodology and educational objectives.

Institutional planning of the educational program may allow significant saving through reduction of duplication and overlap, and sharing of resources. It may be possible to define limits below which effective teaching is not feasible. The emphasis by all Regions on problem-oriented learning carries the implication that a curriculum will be less demarcated by conventional disciplinary patterns.

Recommendation

National and/or international guidelines for facilities should be set and followed, in accordance with the teaching methods adopted and the educational objectives specified.

Actions Required

Appraisal of existing facilities and resources to determine whether more efficient and effective utilization is possible.

Identify any additional facilities which are essential and those which can be merged, modified, or abandoned.

Monitor continuously the adequacy and the utilization of the facilities.

Integrate all facilities available (e.g. those in the community, within, and outside the teaching institutions) for optimal conduct of the educational program.

3.6. LIBRARIES

Is it possible to define a suitable library resource, without which an acceptable programme is unlikely to be mounted?

Summary

All Regions agreed that adequate library support is fundamental to effective functioning of medical schools, postgraduate and continuing education. Such facilities should include reading areas, reference indices, printed journals, texts and manuals, audiovisual materials, and where possible such new technologies as computers for interactive learning as well as trained medical librarians. In addition students must learn to utilize these resources effectively and take advantage of the extensions of library services away from the main teaching centre, a feature which is of particular importance in continuing medical education (CME).

Recommendation

All medical schools should constantly evaluate library facilities for adequacy, for full access throughout each country, and for regular updating. This will often call for international co-operation. Learning materials should be selected particularly with relevance to local needs.

Actions Required

Determine the proportion of overall budget resources required for library facilities.

Medical libraries have to be networked locally, nationally, and worldwide to provide adequate and cost-effective facilities to all users through modern communications technology, inter-library loans, etc. The importance of such international co-operation calls for the active involvement of such bodies as WHO and WFME and other non-governmental organizations in helping to establish and maintain such networks.

3.7. THE RELATIONSHIP TO THE COMMUNITY

What arrangements are desirable between the medical school and the community in which the school is situated so that the community is adopted as a learning resource?

Summary

Medical education must exploit a full range of settings for education, with the whole community and all its health service resources being employed. Medical schools, the health services, and the community need to be integrated in order to restore the spirit of holism to health care.

Recommendation

Medical schools, the universities with which they are related, and all health facilities must be coordinated and administered to establish active and mutually beneficial relationships throughout the system.

Actions Required

Identify, create, improve, and maintain community facilities including in outlying centres to ensure an appropriate learning environment.

Encourage universities, medical schools and health services to develop programmes incorporating the community for training, research and service.

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4 ADMISSION POLICIES, NUMBERS OF ENTRANTS AND MEDICAL MANPOWER

The numbers of doctors required is closely related to socio-economic circumstances, the division of labour within the health team, and the efficiency of such teams. There are still serious problems of under- and over-production of doctors in some countries and regions, with obvious results of inadequate health care in some areas, wastage of expensive resources in others, and medical migration.

Admission policies vary from essentially open admission of all who have a certain level of performance in school examinations to *numerus clausus* in which the size of each entering class is pre-determined. In each case a selection process is at work, almost exclusively that of academic achievement, and this does not correlate well with competence in subsequent clinical practice. Other measures which may correlate more closely, such as personal interview, or recommendation, or psychological testing are under investigation, but are not yet widely either agreed upon or validated.

4.1. A REFLECTION OF LOCAL NEED

Should medical school admissions policies in a country reflect national (or regional) needs for doctors?

Summary

All the Regions are greatly concerned by serious problems of over- and under-production of doctors and of the complex effects of their migration. There is widespread support for the view that the number of doctors produced in a country should relate accurately to that country's need and economic capability to employ them. This requires a national health manpower plan, to be developed jointly by Ministries of Health and Education and professional associations.

In situations where migration of doctors appears unavoidable or even desirable, orderly management of this movement should be planned by regional organisations.

Recommendation

Medical school admission policies in a country must reflect national needs for doctors, with due consideration given also to Regional needs.

Action Required

Define both national needs for doctors, and the economic capabilities to employ them, both as to quantity and quality (i.e. develop a competency profile).

Develop medical school admission policies that reflect national health manpower plans.

Explore the effect of statutory regulation on the migration of doctors.

4.2. OPEN ADMISSION

Is open admission (in contrast to entry by selection, or numerus clausus) still a reasonable practice?

Summary

There are vast numbers of unemployed doctors in many countries while others experience significant shortages; as an extreme example the People's Republic of China requires 500,000 additional physicians to meet current health service needs. All Regions are emphatic that open admission leads to wastage of human and material resources, and unemployment and under-employment of doctors. On these as well as other educational and professional grounds such policies are no longer defensible.

Recommendation

All medical schools must conduct ongoing studies of the criteria employed in their selection procedures and the social/economic effects of the selection process.

Action Required

Identify the authorities in each country responsible for admissions policies.

Induce such authorities to review those policies and where necessary to revise them in a manner that corrects imbalances.

4.3. ACADEMIC ENTRANCE CRITERIA

Are academic performance data still appropriate as the sole, or the major criterion for selection or retention of medical students?

Summary

All Regions are agreed that academic performance criteria, while important, must not be used alone for decisions about entry to medical school, since such criteria do not correlate with performance in the clinical years of medical school or subsequent professional behaviour.

Recommendation

Criteria for selection and retention of medical students additional to academic (cognitive) attainment have to be specified and systematically evaluated.

Action Required

Identify minimal academic entrance criteria that will ensure successful completion of medical school, not academic ranking, within the period of medical schooling.

4.4. OTHER ENTRANCE CRITERIA

If additional criteria are to be employed, which are the most important?

Summary

There is a widespread conviction among the Regions that a variety of personal, non-cognitive criteria are important in selecting and retaining medical students, and some medical schools are using these. There is widening use of interviews, biographical data, interest inventories, value scales and personality tests, as well as agreement that there is a need to develop further and to validate the use of such methods.

Recommendation

Further research must be carried out in all countries to define the predictive value of all selection criteria used by medical schools. Similar considerations apply to postgraduate training.

Action Required

Re-evaluate the selection criteria used by each medical school.
Support these criteria with measures of outcome.
Continue ongoing research on the validity and reliability of the selection criteria adopted.

5 EDUCATIONAL LINKAGES:

The continuities between basic, postgraduate and continuing medical education.

Basic and postgraduate education almost always exist independently, often under different government ministries. Continuing education of experienced doctors, including peer review and audit, is seldom related to either. Yet would there not be mutual benefit in greater co-ordination between undergraduate and specialist training; in greater exposure of both to practising doctors, particularly in their role as decision-makers; and in continuing exposure of experienced doctors to the knowledge, skills, values and attitudes advocated by medical schools?

Resources for continuing medical education vary immensely, as does the need for experienced doctors to keep up to date. The questions of whether established doctors should require periodical recertification, and whether continuing medical education should be obligatory or voluntary, are keenly debated.

5.1. UNDERGRADUATE AND POSTGRADUATE TRAINING

Is the medical school curriculum planned with appropriate attention to the training which follows and is needed after graduation?

Summary

All Regions agree that there are detrimental discontinuities between the various phases of medical education, basic, postgraduate and continuing, and this lack of co-ordination must be eliminated. The promotion of self-learning skills from the start of basic education may prove to contribute in a major way to bridging the gap.

Recommendation

Co-ordination between the phases of medical education must become an established priority to ensure that discontinuities are minimized.

Actions Required

Establish dialogue among the groups responsible for different phases of medical education, and seek mechanisms for joint planning.
Explore any other means of coordinating basic curricula with postgraduate training and continuing medical education and licensure taking account of national health manpower plans.

5.2. UNDERGRADUATE TRAINING AND PRACTICE

Does the curriculum taught in medical schools reflect appropriately and sufficiently what doctors will actually be called upon to do in later practice, particularly the new components of primary health care?

Summary

Doctors in general are now called upon to provide a wider variety of health services, and to undertake many tasks for which present training does not equip them. These tasks, referred to throughout the document, include all the components of primary health care, management skills, teamwork, etc. Medical education thus requires greater coordination with health service requirements than is commonly the case.

Recommendation

Medical school curricula must be changed and continually reviewed to match changing practice needs, especially the emphasis on the primary health care concept now endorsed by the World Health Assembly as a global goal.

Actions Required

Conduct specific analysis of what problems medical graduates must be able to deal with and plan educational programmes from a comprehensive identification of health needs.

5.3. PRACTICE AND EDUCATIONAL OBJECTIVES

Is medicine as actually practised (in all the different aspects of health care, including primary health care, primary medical care, and specialist medicine) in keeping with the knowledge, skills, professional attitudes and values which are advanced as educational objectives of the curricula of the medical schools?

Summary

There are serious mismatches between actual medical practice and the educational objectives of medical schools and other medical training bodies. Medicine in the community calls for competences which are not a significant feature of present curricula.

Recommendation

The present discrepancy between the major thrust of medical education and major health care needs must be corrected.

Actions Required

Establish mechanisms for planning medical school curricula and other medical training programmes through instructive dialogue among medical teachers, health care providers, professional associations, public health authorities and members of the community.

5.4. CONTINUING MEDICAL EDUCATION

Is continuing medical education (CME) given due importance in maintaining the competence of experienced doctors and ensuring their continuing fitness to practise, and are proper resources made available for it?

Summary

In all Regions CME was cited as inadequate and requiring increased emphasis. All Regional reports were in agreement concerning the urgent need to assess, plan, provide, improve, fund and monitor CME.

Recommendation

CME appropriate to national health care needs must be universally established to ensure the maintenance of the competence of all doctors throughout a professional lifetime. Special provisions (e.g. distance learning resources) must be made for those working in remote areas.

Actions Required

Develop incentives that ensure individual participation in CME (e.g. compulsory recertification, other systems of professional audits, diplomas). Seek the necessary funds and resources for CME (e.g. by government, professional subscriptions, non-governmental

organizations), individual practitioners etc.

Establish the roles that medical schools, health ministries, and professional organizations should play in organizing and providing CME. Explore the potential of new technologies (e.g. distance learning, computer-based interactive learning) to reach all medical practitioners, especially those in rural settings.

Monitor the organization and implementation of CME through systematic assessment.

Foster international cooperation in CME.

5.5. EDUCATION AND HEALTH NEEDS

Are the medical school curricula and postgraduate training programmes sufficiently aligned with the proper provision of health care to the population, on an equitable basis and not on a basis which discriminates unduly in favour of the privileged?

Summary

Most Regional reports acknowledged the inequitable distribution of health care at present. The greatest contrasts were between the urban elite and rural poor populations. Medical schools have rarely addressed this issue in the formal preparation of physicians.

Recommendation

Specific governmental policy will be required to remedy such maldistribution. Medical educators, health care administrators and the health professions must together devise ways to remedy imbalances.

Actions Required

Influence decision makers to take the political action required to correct these imbalances.

Foster greater concern by medical faculties to influence the distribution of health care.

Encourage and support medical schools to conduct research, training and service activities in underprivileged areas.

Arouse the interest of doctors in each country to determine what actions are appropriate to ensure the equitable distribution of health care.

6 INTEGRATION OF MEDICAL EDUCATION WITH THE HEALTH CARE SYSTEM

Traditionally the most prominent link is between the medical school and a teaching hospital practising tertiary care, which results in students being exposed to the diagnosis and treatment of serious illness, even if rare, at the expense of less serious conditions which may nevertheless be widespread and disabling, and of disease prevention and health promotion. Closer links between education and service should correct this imbalance but are sometimes hampered because

the two activities are commonly administered by different government ministries. Some medical schools have assumed responsibility for total health care for the population of a defined geographical area thus exposing their students to a full range of health and socio-economic problems, in collaboration with other health-related professions. Such exposure to the actual health needs of a community is likely to influence fundamentally the curriculum of a medical school, and is sometimes resisted for fear that it will detract from the standards of excellence of scientific medicine; but in the words of the Alma Ata Declaration: "The highest standard in medical education for any country is that which is most responsive to local needs."

6.1. LEARNING OUTSIDE HOSPITAL

Should medical school education give greater attention to providing more learning opportunities in non-hospital ambulatory settings and the community?

Summary

All Regional reports are emphatic about the need to integrate all phases of the medical education system with the health care system.

"Medical schools should revise basic curricula to achieve balanced education in the community as well as in primary, secondary and tertiary health care facilities utilized in accordance with the concept of primary health care" (Eastern Mediterranean Report).

"Training of medical students should take place under conditions as similar as possible to those of future practice. This should apply as well to the type of cases that they should see. Re-orientation ... is essential" (Western Pacific Report).

"Curricula can no longer be centred on patients in tertiary hospital settings. Learning opportunities must occur also in smaller hospitals, in out-patient departments, in health centres and in the community itself" (European Report).

It is notable that the need for more learning in the community, recognised fully by those regions with many developing countries, was sometimes even more strongly emphasised by those with highly developed health care systems.

Recommendation

Medical education should be balanced according to the likely patterns of future medical practice. This certainly requires a major redirection towards education outside tertiary care hospitals.

Actions Required

Persuade medical educators that non hospital settings are suitable for medical student learning.
Train medical staff specifically for the task of organizing and implementing educational programmes in non-traditional settings.
Provide appropriate incentives and resources for this kind of educational experience.

Find mechanisms for ensuring cooperative development of such programmes between medical college and community representatives.

6.2. THE LINKS BETWEEN EDUCATION AND SERVICE

Should more intimate links be established between medical education and health service systems?

Summary

All Regional reports endorsed the need for bonding between the medical education and health care systems.

"It is fundamental that medical education should be embedded in the health service provisions of an area" (European Report).

"Integration of medical education with health care systems has become necessary in all the countries of the region. Such an integration is necessary to develop the health manpower development policy. The integration of two systems can take place if there is commitment at the highest level" (South East Asian Report).

Recommendation

Medical education must always be co-ordinated with the health service system.

Actions Required

Establish mechanisms for responsible authorities in medical schools and in health service systems to plan, manage, and monitor together the local or regional health care and medical education systems.

Forge links between these systems at the national level, the local authority level, the medical school level and the community level to include all health professions.

Coordinate health service systems with housing, social welfare, sanitation etc.

Establish links between Ministries of Health and Ministries of Education.

6.3. RESPONSIBILITY FOR COMPREHENSIVE CARE

Should medical schools assume responsibility for a system of comprehensive health care (health promotion, disease prevention, diagnosis and management of acute illness, care of chronic disorders and rehabilitation?).

Summary

All Regions agree that the comprehensive health care concept must be adopted by all health training institutions; this will call for consideration of new areas that influence health care provision. The importance of intersectoral action was emphasised.

"The medical school should incorporate the view of

the medical professional bodies, the allied health professional bodies, government agencies related to health, social welfare, labour, and education. Medical schools should also interact readily with agencies concerned with agriculture, housing, environment, sanitation, water supply, and community development " (Western Pacific Report).

The European Report affirmed that health care was not only medical but included teaching about human rights and values, ethics, ecology, economics, self-care, communication and leadership.

Recommendation

The concept and practice of comprehensive health care should be further developed in medical education, and practised in the health care delivery system.

Actions Required

Create in medical schools and health services models of comprehensive health care, and use the lessons learned to guide further action.

Revise curricula to provide time for learning the principles and practice of comprehensive care through reduction of the cognitive overload which is a subject of almost universal criticism.

6.4. RESPONSIBILITY FOR DEFINED GROUPS

Should medical schools assume responsibility for some defined population group?

Summary

Regions differed in their opinions on this question. " Medical schools may on occasion assume the responsibility for a defined population. Such a defined area should not be isolated from the existing health care delivery system " (Eastern Mediterranean Report). " Medical schools should not take responsibility for providing health services for a defined population group " (Western Pacific Report). " The answer probably lies in sharing with Ministries of Health the responsibility for health care promotion for a defined community which should be effectively mobilized through all customary media to enlist their active participation " (African Report).

Recommendation

Study the evidence already available to further innovative projects, and to determine the costs and benefits of such an approach.

6.5. THE LINKS WITH OTHER HEALTH PROFESSIONS

Should medical schools establish closer links with other health professions in both health education and service?

Summary

The general view of all Regions is illustrated by the statement: " It is absolutely important that medical

schools encourage and foster links with other health professions in both education and service " (African Report).

Recommendation

Medical training should incorporate full awareness of the contribution to be made by other health professionals and actively promote the ability to collaborate with them.

Actions Required

Encourage members of different health care professions to teach together, and their students to study together.

Foster improved modes of communication and cooperation that will lead to the teamwork which proper medical practice requires.

Conduct operational research to determine how best to bring about inter-professional cooperation.

THE MAIN SUBJECTS FOR DISCUSSION

AS HIGHLIGHTED FOR THE WORLD CONFERENCE

During the twentieth century medical schools have undergone an evolutionary process that has led to remarkable advances in medical research and medical care, but these changes have also created new problems in the conduct of medical education. Those issues have been thoroughly discussed in the national and Regional conferences, using as a framework the Six Themes, and have been summarized in the preceding sections of this working document. Because of the inevitable overlap among those themes, and the desirability of bringing into sharp focus the questions that need to be addressed by the World Conference, this final section attempted to highlight what the Planning Commission had identified as key issues in those reports.

First, and foremost, is the universal recognition of a need for change in the way in which medical doctors are educated. Medical schools throughout the world have increasingly taken on the spirit and values of the universities, of which most are an integral part. This has meant that research, both basic and clinical, has come to play a major part in the work of medical teaching staff and as a criterion upon which they are selected and rewarded. It is this orientation that has led to astounding advances in contemporary medical science and complex medical care. But as medical teachers have become increasingly specialized, and medical curricula increasingly compartmentalized, a curious change in the goals and conduct of medical education has taken place. Instead of looking outward to the community which medical graduates will be expected to serve, when devising educational programmes medical teachers look inward to the content of their disciplines; instead of orienting the

undergraduate educational experience to the needs of generalists, which is the most that medical schools can hope to produce, the orientation seems too often that of educating generalists by confronting them with a series of specialists; instead of building instructional activities around the healthy member of the community and the ambulatory patient whom graduates will deal with in greatest numbers, the hospital bed has become the major focus of those educational efforts. Under such circumstances it is not surprising if medical students emerge with great regard for high technology and the most recent knowledge, low regard for the less dramatic elements of health promotion, prevention of disease and caring rather than curing, and less concern for simple disorders which affect the many rather than esoteric disorders which affect the few.

It is in one sense a reassessment of the role medical schools must play as instruments of society that lies at the heart of the debate and discussion which has taken place in national and Regional conferences, and which must be addressed by this global gathering in an effort to reach some consensus to guide individual schools as they plan for the future.

LEARNING OPPORTUNITIES

(From Theme 2)

Most medical school curricula are organized according to the content of academic departments, and are dominated by instructional methods primarily designed to convey information. This traditional pattern is defended as the best way to assure a solid scientific base in the education of medical practitioners, just as it appears to be the most productive way to assure advances in biomedical research. Yet there is mounting evidence that the most rapid and efficient learning is that which follows discovery of what is required to deal with a real problem, and is carried out actively in a manner individually and personally directed, rather than passively in a group and by external dictate.

It is not tradition alone that leads to the firm preservation of this pattern in so many schools. Despite the fact that students admitted to medical schools are generally among the most academically talented of their age group, there is a widespread feeling that most are not sufficiently mature or motivated to be successful in a programme that is in some significant measure self-directed. And it is true that in countries where selection is on the basis of academic criteria alone at least some individuals are admitted who have no real thirst for learning, and no deep commitment to acquiring those skills which contribute to competence as a physician. But it is also true that the nature of the educational programme, particularly in early years where the content seems so remote from the goal of becoming a medical doctor, is often clearly demotivating and may even induce passivity and resentment.

All of this provides an additional reason for medical faculties to give serious consideration to the use of another organizing principle in formulating the educational programme: the principle of problem orientation. Many teachers might say that they already use such an orientation, presenting to students the information they use in solving clinical or biomedical science problems. Yet this is very different from helping students to identify problems (both in clinical medicine and in the community), guiding them in the selection of resources they might use in acquiring the information and the skills required to solve the problems, and providing regular feedback on the extent to which they have succeeded in accomplishing that task.

Thus there appear to be two persuasive reasons for considering this alternative organizing principle in medical curriculum planning: first the facilitation of learning which it provides; and second the link to realities in the health service system which it offers.

TEACHING PRACTICES

(From Theme 2)

An examination of medical school instructional programmes suggests a widespread belief that teaching is a matter of telling and showing, and that excellence as a scientist or practitioner is equivalent to excellence as a teacher. While each of these beliefs carries an element of truth, both are incomplete descriptions of the essential components of what should be a skilful activity. At least one regional report has deplored the "amateurism of medical school staff" in fulfilling their educational responsibilities.

Whether there is general willingness to accept this accusation may be subject to question, but there can be little disagreement with the general view that the academic ethos is not one which provides the same kind of recognition and reward for those who devote themselves primarily to medical teaching as to those who distinguish themselves as basic or clinical research scientists. Yet there can be little quarrel with the view that both kinds of medical staff are essential to the effective conduct of medical education, and that some redress of the present imbalance is called for.

If the World Conference accepts the position that medical education in the future must provide greater opportunity for independent and self-directed study by medical students, then medical teachers must acquire a set of skills that encourages and facilitates this kind of learning. If it is agreed that problem orientation is a more fruitful organizing principle for curriculum planning, then the teachers who plan must gain some greater understanding of how such instruction can best be developed and implemented. If there is agreement that interdisciplinary and interprofessional programmes must become far more prominent in all phases of medical schooling, then

medical teachers must be helped to develop a different perception of their educational roles. If there is acknowledgement of the fact that the education of undergraduate medical students aims to produce generalists at graduation, then teachers who are virtually all specialists may need to learn how to perform in a different manner as facilitators of learning.

All of this suggests that systematic preparation for the task of teaching is as important as systematic preparation for the work of medical practice or research. The means by which this is accomplished, the mechanism for assuring that it is done, the development of appropriate recognition and reward for doing it, requires the most thoughtful attention by leaders of the medical education enterprise. It is completely clear, however that there is a need for change in present teaching practices, and in the way in which teachers are prepared for a role appropriate to training doctors for the future.

ASSESSMENT

(From Theme 2)

Although medical educators are often reluctant to acknowledge it, the simple truth is that assessment systems, far more than curriculum or instruction, determine how learning takes place. While this is particularly evident in medical school programmes, it occurs in postgraduate training also when qualification is by examination, and will be increasingly evident in continuing education if the present movement toward recertification through examination becomes widespread.

It is also true that most contemporary assessment systems probe primarily a candidate's ability to recall or recognize information. The assumption underlying this practice is that if trainees have knowledge they will translate it into action when required to do so. Unfortunately there is little evidence to support such an assumption. While unquestionably interrelated, knowledge, competence (i.e. the ability to carry out a task), and performance (i.e. doing what is required) are independent variables and all need to be assessed both for the purpose of documenting achievement and to convey a message about qualities that are valued by the medical staff.

There can be little doubt that competence and performance involve more than the possession of knowledge: they demand the exercise of technical skills, and are influenced by the attitudes and values that have been acquired in the course of training. Among such skills are those subsumed under the general heading of problem-solving, the ability to acquire information through history and physical examination, to communicate information to patients and families and colleagues, and to convey a sense of concern for those who seek help, for example. While knowledge of these abilities can be determined by conventional testing procedures, the ability to use that

knowledge requires altogether different assessment methods.

Although not yet widely adopted there is growing recognition of both the desirability and feasibility of employing such techniques as the Objective

Structured Clinical Examination (OSCE), simulations in the form of models as well as standardized patients, to sample such clinical skills in a systematic fashion.

But these newer techniques are unlikely to be embraced by medical teaching staff unless leaders insist that the assessment of knowledge alone is not enough to ensure that the products of medical schools and postgraduate programmes will meet the rising expectations of patients, and the increasing demands of a more complex health service system.

COMMUNITY ORIENTED EDUCATION

(From Theme 3)

The community which medical graduates must serve can be defined as global, regional, national, or local, and depending upon the particular target (or targets) a medical curriculum can be constructed in some rational manner. For most schools, whether explicitly identified or implicitly acknowledged, the target is a nation or a more restricted locality, yet neither demographic nor epidemiological and sociological data seem to occupy an important place in the curriculum planning process. If this formulation is a reasonable one, then the health needs of the community should clearly exert a profound influence upon the content and setting for medical student teaching and learning.

There is however considerable debate as to the relative emphasis to be given to community orientation. Some would go so far as to insist that the educational programme should be not only community oriented but community based. Others take the position that it is a matter of emphasis rather than exclusion, and that there is a place for tertiary and secondary care centres as well as primary care sites in a well rounded medical school programme. Objective resolution of this dilemma seems more likely to be accomplished, or at the very least a direction identified, in such a global consultation as the World Conference than on the local battlefield of an individual medical college.

PRIMARY HEALTH CARE

In looking at any of the communities referred to above it would be difficult to deny the argument that the greatest needs lie in the broad area of primary health care. These are the problems presented by the minimally ill and the anxious well, the problems of individuals, families and communities, of the chronically ill who need support as well as the accidentally injured who need simple repair, of both the child and the adult who needs to be kept well. The scientific base for the delivery of this care is now better understood and students must become familiar

with it. But it is unlikely they will learn either the science base or the service orientation if that learning is derived primarily from working with patients whose illness is serious, complicated, requiring hospitalization and the diagnostic or therapeutic support of advanced technology.

Either/or debates on this matter are unlikely to be very productive; it is again a matter of balance. Since limited time is available for undergraduate medical education a choice must be made as to where emphasis should be placed. In much of the world medical schooling is the end of formal professional training, and graduates move directly to positions of responsibility for delivering health care; in other parts of the world, conclusion of medical schooling represents a midpoint in the span of professional education. If graduation from medical school is to have a common meaning many would insist that it should signify the achievement of competence to perform the work of a primary care medical doctor. In those places where internships and residencies leading to specialty qualification or certification are available, this represents the common base upon which further training is built.

SELECTION CRITERIA

(From Theme 4)

This issue has been dealt with, often at length, in each of the regional and most of the national conference reports. Here it is necessary to do no more than highlight the general conclusions that "open admission" to medical school is wasteful of human and financial resources, that the numbers admitted to medical school should bear a close relationship to defined national or regional needs for medical doctors, and the economic capability to employ them, and that academic criteria alone are insufficient in the selection of those best qualified to become effective medical practitioners.

While it may be easy for World Conference participants to agree in principle with these conclusions, the far more important question is what to do about them, for unquestionably they touch upon sensitive social and economic issues that cannot be ignored. Nonetheless such a body of concerned leaders should be able to suggest some practical means by which individual nations can deal with the critical problem of overproduction in some places, underproduction in others, and maldistribution of medical doctors in virtually all. The question is not one of selection criteria alone, but few can doubt that the qualities of those who enter medical school have a significant effect on the quality of those who emerge from it.

LINKS BETWEEN THE STAGES OF MEDICAL EDUCATION

(From Theme 5)

In public schooling a sequence of elementary, intermediate, and advanced instruction is the conventional plan for achieving clearly defined objectives; each stage builds upon what has gone before, and prepares students for what will follow. It is in striking contrast to medical schooling where objectives are commonly implicit rather than explicit, where individual teachers, or even departmental groups, are rarely familiar in more than the most general terms with what students have been exposed to or learned before, or what they will subsequently learn. Overlap and duplication, gaps and inappropriate emphasis, are far from uncommon within a medical school, and instruction rarely seems to take into consideration the fact that much of what is now taught in the basic course may more properly belong in postgraduate or continuing education.

There are those who would defend such seemingly random arrangements of content and sequence, believing that teachers should teach what they think important from their disciplines, and students should extract from those sources and others what they ultimately require to carry out their professional responsibilities. Others would regard this pattern as both wasteful and ineffective, believing that sequence and continuity, and agreement upon long term goals and short term objectives, joint planning among those responsible for teaching, are essential ingredients of a medical education that is both efficient and productive. While the weight of evidence seems to favour the latter position, the present instructional practices seem to indicate preference for the former. If evidence is to dictate the way in which education is conducted then the serious barriers to communication between and among students, medical teaching staff at these several levels, administrators, and community representatives, will need to be addressed more vigorously.

LINKS BETWEEN EDUCATION AND SERVICE

(From Theme 6)

If a major objective of medical schools is to produce practitioners of medicine, then it follows logically that there should be some intimate link between the education and service systems. That link certainly exists in one way in that all medical schools include among the members of teaching staff those who are actively engaged in medical practice, and either own or utilize general and special hospitals as instructional settings. But these links are with individuals and institutions rather than with the health service system that in many nations is operated by a Ministry of Health while medical schooling falls under the responsibility of a Ministry of Education. If the two are not linked in some operational way then there is no means of assuring that the manpower

needs of the health service system will be met by the training institutions, or that the nature of training will be consistent with the competences required of graduates who will work in that system.

Just as there are impediments to communication about goals and objectives and instructional methodology among departments within a medical school, so too are there impediments to communication between the health professional education and health service delivery systems, impediments that are rooted in tradition and territoriality. The good will and good intentions of leaders in each are not to be questioned, but the result of independent and uncoordinated planning, management, and monitoring is too often dissatisfaction with the training provided, discomfort with the work assignments offered, and fragmentation of the health services available. It seems unlikely that this problem can be dealt with by individual institutions alone, but rather requires the interest, the professional concern and the political will of higher authorities to deal with it in a constructive manner.



THE DAYS IN EDINBURGH

It was on 6 and 7 August that most of the delegates were to arrive by air from around the world, and, as the organisers subsequently agreed, if one was to make arrangements for this process to be thrown into near chaos a failure of the computer system at London Heathrow Airport would have been the most efficient way to do it. It was however this previously unexperienced event which fate decreed was to be our lot, so that long laid plans for meeting delegates were thrown into disarray; it almost seemed as if those who resist change in medical education had been at work! Many spoke however of the willing smiles of the reception party at the airport, and the patient adjustments of the young people who were to be the delegates' drivers, and who were identified by 'T' shirts bearing the Conference logo of the University Old College; this is the building designed by Robert Adam, described as his noblest, and used by the conference. The patience of the delegates with this unforeseen hazard was exemplary. The delegates were mostly housed in the Carlton and North British Hotels, and in the University's Pollock Halls of Residence which are so well situated next to Edinburgh's long extinct volcano, Arthur's Seat. After a month of record rainfall, for the first two days at least the clouds were few and delegates were able fully to appreciate the beauty of their environment.

Registration was at the Old College of the University on the Sunday evening, followed by a reception by the University in the splendid environment of the University Upper Library designed by Playfair - where the daily luncheons were also to be. The President of WFME, Professor Henry Walton, and the Principal of the University, Sir David Smith, greeted the delegates warmly, and Sir David told them something of the history of the building. It was a happy occasion, where old friendships were renewed, and it did much to set the tone of the meeting.

The President of the World Federation, Professor Henry Walton, presided at the World Conference. Mr. Ian Lang, Minister of State at the Scottish Office of the Government of the United Kingdom, welcomed the participants. There were keynote addresses by the President of the World Federation, by Dr. Hiroshi Nakajima, on his first appearance at an international conference as Director-General of the World Health Organization, and by Mr. James Grant of UNICEF.

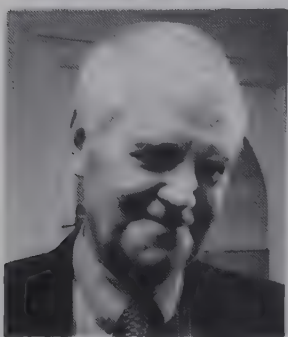


On a later occasion Mr. Marco Diaz of UNESCO told delegates of the considerable interest of Dr. Federico Mayor (Director General of UNESCO), and of UNESCO itself, in the aims of the World Conference.

This was to be in many ways a unique conference, for the six regions of the world had already given long considered and carefully prepared accounts in national and regional reports of the ways in which medical education should be reformed, and their views had been condensed into a world report circulated to delegates prior to the conference. The delegates therefore were already steeped in the subject, and had been able to identify for themselves both the topics of particular overall importance, and ones of particular relevance to their own regions. It had been decided that members of the Planning Commission should introduce the various Themes at plenary sessions in the New Senate Room of the University, and that the Themes should be discussed in six discussion groups, each of which was asked to concentrate on a series of allotted subjects, in small rooms at other sessions. The groups mostly worked in rooms well adapted for the purpose in the University Department of the Faculty of Law. The groups in the first three sessions concentrated on the areas of special concern assigned to them, and their co-ordinators and rapporteurs then reported to Dr. Jack Bryant who had the main responsibility of rapporteur for the conference.

Dr. Bryant's personal dedication, clarity and effectiveness were apparent particularly to those who

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worked most closely with him. Towards the end of the conference delegates were regrouped to look together at the problems of their own regions. From Tuesday onwards the deliberations of the groups of the previous day were capably put before the conference by representatives from among the group rapporteurs.

Many commented favourably on the high quality of the speeches in the plenary sessions, where experts in the field of medical education, equipped with an intimate knowledge of the wishes of its world presented them clearly and with unique authority. In the discussion groups the intensity of involvement was notable. It was clear that in Edinburgh was assembled a group of experts from around the world who genuinely cared about the problems of medical education, and who were agreed that action was urgently needed to effect change. Their collective dedication to this theme was to be embodied in the Declaration with which this document starts, and which includes also an account of the principal reforms which they considered to be required. The fine environment of the University's Old College, and of a city and a university with great traditions in the field of medical education, undoubtedly contributed to the sense of the spiritual values at work which should imbue medical practice at its best; these values were manifested at this conference both by a renewed determination to train young doctors for greater equity in health care, and to the provision of services to better meet the defined needs of the societies which these doctors will serve. In daily work the dedication and the harmony in which the work was done could be seen as other fruits of this same spirit. Many participants were well aware that they were turning a page of history.

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The conclusions of the conference are embodied in this report, and the report itself will be one of three main lasting memorials of the conference. Reference has already been made to the first, the Declaration. The third is the decision that an Institute should be established concerned with medical education at the global level, together with an International Organisation to act as a resource, as stimulator of experimentation in the field, and as a conduit for sharing developments throughout the world; the aim is that it will act in concert with the many existing



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Key to photographs: Top of page 31 The Planning Commission Photo 1 Mr I. Lang Minister of State, with a group of guests for lunch given by the Scottish Office. 2 The Group Photograph at the Old College 3 Prof H I Walton 4 Mr J. Grant and Dr H Nakajima 5 An evening with the Scottish Chamber Orchestra 6 Lunch given by ILM Government at Prestonfield House



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organisations in the field, and with the National and Regional Associations for the Study of Medical Education world-wide. By unanimous agreement of the Executive Committee it was decided that this Institute should be sited in Edinburgh, and the Lord Provost of the City gave a magnificent pledge to provide a building for housing it at a meeting of international agencies and sponsoring bodies on Thursday 11 August in the Old Senate Room, described by the former Principal of the University, Sir John Burnett, who took the chair, as perhaps the most beautiful committee room in the world. This was an historic offer, and already the University of Edinburgh too has expressed its own shared interest in such an establishment. At this meeting the necessary funding was discussed, and there was a reliable opinion expressed that such money should not be hard to find.

Following the meeting a splendid dinner was given for those present by the Right Honourable Eleanor McLaughlin, who is the first woman to be Lord Provost of the City of Edinburgh.

A lunch was given for senior representatives of the World Federation, and the World Health Organization, and for Ministers of Education and Health by Her Majesty's Government hosted by Mr. Michael Forsyth, Minister for Education and Health at the Scottish Office.

The cultural hunger of the delegates did not go unmet. A reception by Her Majesty's Government at the Chambers Street Museum, where delegates were welcomed by Lord Sanderson, Minister of State, on behalf of the Secretary of State for Scotland, the Right Honourable Malcolm Rifkind, was followed by a concert by the Scottish Chamber Orchestra hosted by WFME - generously provided by Christian Salvesen plc.; the acoustics were excellent and delegates could see and hear for themselves that the orchestra's international renown was well earned. On another evening they had an opportunity to witness Scottish dancing, piping and singing of a high order at a Reception provided by the President and Council of the Royal College of Physicians of Edinburgh. On the Thursday evening the delegates were invited to attend



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the first night of an exhibition of the paintings of Joan Eardley, one of Scotland's great artists of this century. On the Monday evening a banquet in the noble Georgian dining hall of the Royal College of Surgeons of Edinburgh was itself too a reminder of grander days; the reception prior to the dinner was at the invitation of the President and Council of the College, and the banquet was provided by Messrs. Ethicon. Speeches at the dinner by Sir Peter Froggatt, chairman of the Association for the Study of Medical Education (ASME), and by H.E. Dr. O. Ransome-Kuti, Minister of Health of Nigeria, were much acclaimed. A medal struck by the World Health Organization on its fortieth anniversary was presented by Dr. Nakajima to Professor Henry Walton.

A description of an event can never fully capture its atmosphere. There was a strong sense of a ferment at work, and a real conviction that the ferment would be carried to the corners of the globe to play its part in achieving the changes agreed to be required. This ferment for change arose in the first place at the institutional level, needing local leadership and will to let it work well. The Ministerial Consultations will provide the pressure for change from above, where that is necessary. The medical students of the world and the general public collectively stand to gain most from these deliberations, and the proposals regarding continuing medical education will affect experienced doctors. As this great endeavour moves from studious contemplation to effective action, albeit belatedly, their needs will start to be better met. Delegates departed with the sense that in Edinburgh, in August 1988, there was a collective will for action. Those who were there will not forget it.

Key to photographs (continued)

7. Prof. Sharifah Shahabudin reading the Edinburgh Declaration. 8. The Group at the Declaration: Dr. Marco Antonio Dias, Dr. George Miller, Dr. Timothy Blaxter, Dr. U. Ko Ko, The Lord Provost Rt. Hon. Eleanor McLaughlin, Dr V. Ramalingaswami and Professor Henry Walton

Conclusions of The World Conference

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THE LARGER TASK

REPORT OF THE CONFERENCE

Introduction

Four years of planning, numerous discussions at country level, and six Regional Conferences culminated in the World Conference on Medical Education aimed at global reform in the education of doctors. In a field notorious for slowness to change, what were the prospects that change would come now, even after four years of meticulous planning with extensive involvement of concerned parties at every level and every stage?

The participants were optimistic, even confident, that substantial change in the orientation of medical education towards greater relevance to the needs of their societies would follow. One reason for that optimism had to do with the stage of the process represented by the World Conference where two important steps were taken. One was a statement of intent to move with all seriousness and commitment, expressed in the Edinburgh Declaration. The other was to move from concept to strategies for action, which was the major undertaking of the Conference.

A further reason for believing that progress towards re-orientation would follow was the feeling by many participants that such changes were truly necessary, unavoidable and urgent. Some would go so far as to say that if changes were not undertaken by those responsible for medical education, that they might lose the opportunity to do so and that others would then take the initiative, as a result of public demand

STRATEGIES FOR ACTION

While the duration and structure of the Conference were not intended to develop full strategies for action, illustrative strategies were formulated, incorporating steps that would have to be taken at the medical school itself, and at national, regional and global levels.

Formulating strategies for fundamental change in medical education is a complex undertaking. One reason for this is the requirement to involve multiple parties in achieving change in an area where self-interest is intense and deeply rooted. Another reason has to do with the wide range of support required by medical schools as they try to move onto new ground.

The process of planning for the World Conference had already covered a great distance in strengthening or establishing such supportive arrangements. There was an evolving understanding of how medical schools would interrelate with national, regional and global supportive programmes as they strive toward reform.

The four levels—medical school, national, regional, global—differ substantially in their roles and contributions to reform in medical education. The participants addressed them all, each level in turn, and then their interactions and synthesis. What has emerged can be called an International Programme for Support of Reorientation in Medical Education.

A central tenet of this effort is that further international collaborative programmes for effective support of change in medical education will have to be established.

ACTION AT THE INSTITUTIONAL LEVEL

The major part of the effort to promote re-orientation in medical education toward the health needs of society is ultimately to be expressed at the institutional level in terms of modifications of educational programmes relating to the training and further continuing training of doctors, and also as

these relate to service and research responsibilities.

Without resolve to change at the institutional level, little will transpire, whatever the external pressures. Given interest in change within the institution, then an international programme of support can be highly effective.

The participants identified a series of issues that might be raised by the institutions themselves in opening up the possibilities of change:

1. Assess the current medical educational programmes in terms of their relevance to the health needs of society.
2. Consider the congruence of the medical educational programme and the health and health manpower policy of the country.
3. Review with medical teachers and students their willingness to undertake such assessments, and to do so collaboratively with those responsible for the national health services.
4. Assess the role the medical school can play in collaboration with the national health services in planning the future of those services and in the implementation of those plans.
5. Assess the possibilities of shifting the settings for learning so that community-based and hospital-based settings are used in a balanced way.
6. Consider the curriculum and teaching methods in terms of the extent to which they involve problem solving rather than didactic methods.
7. Consider incorporating the training of teachers in teaching methods as an integral part of development of teaching staff.
8. Assess the rôles doctors of the future might fill in providing care to deprived populations, including working with community people and other health

- workers in planning and managing comprehensive primary health care programmes, and whether their current competences correspond to their future rôles, including the leadership rôle they would have in such programmes.
9. Consider ways in which medical students could work together with students of other health professions in order to strengthen the potential for team work.
 10. Consider the forms of external support that would facilitate proceeding with these changes.
 11. Consider the steps necessary to bring teaching staff and students to a readiness to deal with such issues.
 12. Give thought to advocating the need for change to the public and to leaders in policy making.

Consideration of these issues constitutes the first steps of institutional reform. Having identified which of these steps they would undertake, institutions would then move toward development of plans of action, including defined targets and time frames.

ACTION AT THE NATIONAL LEVEL

While all levels are important, action at the country level is particularly so. On the one hand, interactions between national health policies and medical education, and between service and research are worked out at this level, involving concepts crucial for ideas of common interest between university programmes and national needs. On the other, regional coherence is considerably strengthened by joint national political commitment, thus paving the way for concerted global action.

In countries with multiple medical schools, there is the potential for collective action in identifying priority problems and actions in which institutions are encouraged to initiate reforms and National Associations of Medical Education provide essential support. The national organizations may either provide support directly or draw on further assistance from regional and global bodies.

The Discussion Groups at the Conference probed deeply into the components and dynamics of reform at the national level. Among other contributions they developed a prototype of planning for change at the country-level. The following list of strategic steps might not be required by all countries; rather, the list might be seen as a series of steps from which countries could consider which apply to them:

1. Specify the major problems facing the medical schools in the country, such as: lack of relevance to health service requirements; over-production of doctors in relation to national health manpower requirements; laboratory and lecture room-based and hospital-centred learning; excessive emphasis on teaching to passive students; inadequate

knowledge of teaching staff of problem-based learning methods.

2. Identify the overall goal and directions of re-orientation.
3. Based on the above, identify major areas for action and targeting:
 - a. Formulate a medical education policy in the context of the national health and health manpower policy, and ensure their continued interaction.
 - b. Develop a health manpower plan and a medical education system that is responsive to the needs of the country in terms of the quality and number of graduates and fields of practice.
 - c. Establish a national coordinating mechanism to link the education of health personnel to other relevant sectors, including non-health sectors.
 - d. Encourage interactions between medical schools and other departments or divisions of the universities to achieve common goals in health development.
 - e. Promote the development of medical education so as to ensure commitment and support from:
 - leadership in policy making
 - professional associations, licensing bodies, medical councils
 - practicing health professionals
 - teachers
 - medical students
 - health services personnel and managers
 - communities.
 - f. Facilitate exchange of information and expertise regarding changes in medical education within the country.
 - g. Conduct research in medical education to refine understanding of the problems and to support policy formulation, implementation and evaluation.
 - h. Identify educational programme reforms to be undertaken at the institutional level, such as:
 - extend settings for education to community and other non-hospital sites
 - modify curriculum content to make it more relevant to national health needs
 - modify teaching methods to emphasize problem based learning, including in community settings;
 - incorporate the team approach in both health services and learning experiences of students;
 - incorporate learning of new skills, such as computer literacy.
 - i. Review student assessment procedures and criteria and consider modifications so as validly to assess performance, and to support learning.
 - j. Review administrative mechanisms and

structures of medical schools and consider modifications to facilitate the change process.

- k. Develop the teaching staff needed by improving:
 - teacher selection
 - ongoing training of teaching staff
 - support of career development
 - work conditions
 - incentive systems
- l. Incorporate into assessment and promotion systems rewards for teaching staff for interest and creativity in dealing with needs for change.
- m. Develop indicators and milestones, and monitor changes in medical education.
- n. Promote and carry out inter-country co-operation share information and experiences.
- o. Encourage interactions between medical schools and other departments or divisions of universities to achieve common goals in health development.

ACTION AT THE REGIONAL LEVEL

The World Conference provided a special opportunity to organize discussions along regional lines, and to extend action plans developed earlier within the regions toward strategies for implementation.

A key issue has to do with how Regions will organize their approaches to re-orientation of medical education. Regional Associations of the World Federation for Medical Education, together with Regional Offices of WHO, and other interested parties will form collaborative arrangements to address the imperatives for change.

In each of the six Regions the current approach to reform of medical education had been assessed and further steps needing to be taken specified. While the regions differ greatly in their circumstances, the actions follow similar patterns. Here can be given examples of the kinds of actions required to promote and support change, which the proposed International Programme will be expected to carry out.

Organize Interactions:

1. Ensure linkages among national associations and through them with their medical schools.
2. Develop and maintain linkages with relevant regional and global bodies-governmental and non-governmental.
3. Convene Ministerial Consultations in all six Regions as an immediate follow-up to the World Conference.
4. Convene meetings with deans of medical colleges, directors of health services and other appropriate parties.

Assess and Monitor Problems and Monitor Reforms:

1. Collect and disseminate information relevant to problems and reforms.
2. Establish a regional task group to review reforms and monitor changes.
3. Develop indicators and milestones for monitoring changes in medical education.
4. Promote self assessment by institutions.
5. Analyse apparent obstacles and resistance to reform, and develop appropriate strategies.

Develop Capacities for Advocating and Supporting Change:

- develop materials and other resources that can be supportive of changes
- curriculum materials
- components of health care system relevant to student field experience
- examples of changes being attempted elsewhere
- consultations
- traineeships for teaching staff
- seed money for projects
- travel money to see other examples
- develop strategy to sensitize teaching staff to need for change
- maintain inventory of supportive resources available in regional institutions.

Develop Projects:

1. Initiate multi-institutional research on effectiveness of curriculum changes, such as community-based education.
2. Formulate projects involving several institutions in undertaking reform, possibly involving comparisons of results, and facilitate obtaining project-based funding.

Mobilize Resources:

- look to national, regional and global sources for resources e.g. WFME, WHO (or facilitated by association with WHO); foundations; regional international organizations, bilateral agencies and private philanthropy.

ACTION AT THE GLOBAL LEVEL

A number of supportive relationships between medical schools and organizations that function internationally at the global level have an historical basis, and these have been strengthened during the several years of preparation for the World Conference. New relationships also have been established, and for all of these interactions, there are new dimensions in the direction and commitment to change.

A number of organizations and agencies will have critical roles to perform:

1. WFME, in close liaison with WHO and in open collaboration with other interested parties, will serve in a coordinating, guiding and catalytic rôle. It will maintain a broad view of medical education internationally, co-ordinating implementation of the overall action plan expressed in the Declaration. It will promote the development of arrangements to support change at regional, national and institutional levels, and co-ordinate the monitoring of those changes. There will be an avoidance of duplication of efforts that are already underway, and an effort to function in complementary ways so as to promote optimal use of available commitment, interest and resources.
2. WHO will continue to play a key rôle in promoting re-orientation of medical education, in keeping with its mandate as the international co-ordinating health agency of the world, working together with its 166 member states for the goal of health for all through the primary health care approach. It will function through its global-to-region-to-country structures, through its critical relationship to health policy and health services development internationally, and by virtue of the trusted position it has in relation to countries and intergovernmental, non-governmental and bilateral agencies.
3. UNESCO has indicated its interest in participating in supportive arrangements for programmes of change, and will be able to facilitate access to Ministries of Education and also, through the International Association of Universities, to universities. UNDP, UNICEF, UNFPA and the World Bank are other UN agencies with strong potential for assisting in this effort.
4. The Network of Community-Oriented Educational Institutions for Health Sciences is an available resource consisting of institutions with actual experience in innovative community-oriented education, and would be an important participant in this effort.

WHO will continue to play a key role with its mandate from 166 member states in its goal of health for all mainly through improved primary health care

5. Student organizations, such as the International Federation of Medical Students' Associations, have especially important roles in bringing student perspectives and advocacy capacities to this effort.
6. Other groups have important potential roles to play, including the International Association of Universities, the Council of International Organizations for Medical Sciences, etc.
7. Several foundations and sponsoring bodies have indicated the possibilities of assisting the development of these programmes.
8. The range of activities at the global level is similar to that at the regional level, including:
 - organizing interactions
 - assessing problems and monitoring progress of change
 - advocating and supporting change
 - developing and supporting projects
 - mobilizing resources

CONCERTED ACTION

While each level has its particular rôle to play, it is quite clear that effective steps must be taken at each of the four levels if this ambitious effort to bring about substantial change in medical education globally is to succeed.

It will be when the four levels—medical school, country, region, global—are functioning in concert that substantial progress can be realised:

1. At the institutional level, medical schools can be helped to see the need to change and supported in their efforts to change, and their experiences, both successes and failures, can be communicated with others.
2. At the country level congruence between the health care needs of society and medical educational programmes should be promoted.

The institute responsible should be encouraged to undertake reforms and Supporting Services be made available.
3. At the regional level, support and encouragement can reach out to national associations of medical schools, informative interactions among schools and countries can be facilitated, support for change can be generated, and progress monitored, with feed-back coming from institutional and country level as to the problems and progress.
4. At the global level, with an overview of these activities, it will be possible to promote support where needed, to capitalise on successful efforts to change, and to maintain an agenda of actions, focussed particularly on emerging and unresolved problems, that will keep the effort current and dynamic.

The Edinburgh Declaration calls for widespread commitment to action, vigorous leadership and political will to alter the character of medical education so that it meets the needs of the society in which it is situated. The world leaders in medical education who participated in the Conference at Edinburgh thoroughly demonstrated these qualities, and were spirited in their commitment and readiness to proceed to implement the actions which they and their colleagues at country and regional level put forward. While change may have come slowly in medical education in the past, there were reasons to be optimistic that the quality and strength of resolve expressed over the past four years of preparation and at the Edinburgh Conference would accelerate change and strengthen the impact of reform to the benefit of the world's people.

The strength of resolve, already growing, to improve Medical Education has been much enhanced by the World Conference and bodes well for the impact of reform

THE PATH AHEAD

The ground is prepared. Extensive work by committed people and agencies over recent decades, and the four year preparatory period leading to the World Conference on Medical Education, have built a foundation for major advances against problems in the field of medical education.

The Edinburgh Declaration has been issued, strategies for action are being formulated regionally and nationally, inter-ministerial meetings involving both ministers of education and health are planned, an inter-agency task group of WHO, UNICEF and UNESCO is being formed, funding is being sought, and increasing numbers of institutions and individuals in all six regions are exploring possibilities of action for change in their own settings.

How can these efforts be given coherence? What kind of organizational frameworks might be developed that would promote and facilitate rather than stifle change?

PRINCIPLES AND ORGANIZATIONAL FRAMEWORKS

To begin, it is well to outline some principles to guide the development of organizational frameworks that were called for in the Edinburgh Declaration.

The most important organizing principle is that definitive action should, wherever possible, emanate from the medical educational institutions themselves. It is there that the impact on medical students and on programmes for post-graduate training and continuing medical education will be made, or fail to

be made. There, too, will be the definitive locus for addressing institution-based problems of change in medical education. And it is there that many of the most important solutions to tomorrow's problems will be worked out and then shared with other institutions and other levels of the global effort. Here, then, is the principle of independent and flexible initiative coming from the bottom and proceeding upward through the international organizational frameworks. To put it differently, this is not the place for top-down prescriptions.

But, of course, few if any institutions will be able to address the needs for change independently and without support. The most important supportive resource will be at the national level. Here will be the interactions with national health and health manpower policies, with political and public figures, and with other relevant groups and organizations. Here, too, will be a collective effort of the medical schools to share experiences, refine understanding of problems, and join together in addressing those problems. The national level will also provide nodal points for interaction with regional and global supportive efforts.

Definitive action should, wherever possible, emanate from the medical educational institutions themselves. It is there that the impact on medical students and on programmes for post-graduate training and continuing medical education will be made, or fail to be made.

Regional and global supportive efforts are, ultimately, intended to reach the medical schools and post-graduate and continuing medical educational programmes through the intermediaries of regional and national organizations. Here, the principle involves support coming from the top down, in response to requests from the national and institutional levels, or to draw attention to problems which appear to be receiving too limited attention.

An important characteristic of this international effort, which adds complexity but has great potential strengths, is pluralism. Multiple organizations, agencies, groupings and individuals are involved in grappling with problems of medical education, some deeply committed and greatly experienced, others more peripherally related but with potential for greater and more effective involvement. Given the diversity of these parties, it is unlikely that a single organizational framework will either attract or contain them. Thus, the Edinburgh Declaration wisely speaks of organizational frameworks.

The principle here has to do with making best use of these interests in order to have beneficial effects at the level of medical educational programmes.

Organizational approaches should be taken that will provide opportunities and encouragement for interested parties to participate in this international effort, either in collaboration with others or independently but constructively, depending on their missions and modes of action. At the same time, a core set of organizational frameworks should be established that will give coherence and strength to the effort. The key principles are collaboration, openness and coherence.

THE NEXT STEPS

An International Collaborative Programme for Reorientation of Medical Education

In accordance with these principles, an International Collaborative Programme for Reorientation in Medical Education is being established. It will be referred to here as the Programme, and the steps to be taken toward its implementation are described below.

WFME, in concert with WHO, should undertake the following steps without delay:

At the Global Level

1. Ensure adequate financial support for the Programme.
2. Establish an appropriate and supportive institutional base in Edinburgh for the Programme.
3. Develop, in conjunction with WHO, a body (or bodies) to advise, oversee and support the functions of the Programme.
4. Develop further the collaborative relationships with other UN agencies, including UNESCO, UNICEF, UNDP, World Bank, and other bodies.
5. Explore the interests of international sponsoring bodies, including foundations and trusts.
6. Extend an invitation to other interested organizations, agencies, networks and individuals to explore the ways in which they could participate in this international collaborative effort.
7. Convene meetings of the Executive Committee of the WFME to further its understanding of its functions in the further development of the Programme.
8. Based on the emerging national and regional plans of action, develop and then implement a global plan of action for the Programme.
9. Develop and implement an operational plan for the central office of the WFME.

Extend an invitation to other interested organizations, agencies, networks and individuals to explore the ways in which they could participate in this international collaborative effort.

In summary, key words that describe guiding principles for this international effort are:

- *bottom up - initiative, creativity*
- *concrete solutions*
- *top-down, sideways and diagonally - collaboration*
- *internationally - constructive pluralism within stable organizational frameworks*

COLLABORATION AND COHERENCE—WFME AND WHO

The core components of the framework emanating from the World Conference on Medical Education and the Edinburgh Declaration will be WFME working in close partnership with WHO. At the global level, the WFME office in Edinburgh will interact directly with WHO Geneva. At the regional and national levels, the main interaction will be through Regional and National Associations of WFME with the regional and national offices of WHO; the central offices of WFME and WHO will often be conduits for communication and involved in the interactions.

Thus, WFME, in close liaison with WHO will serve in a coordinating, guiding and catalytic role, maintaining a broad view of medical education internationally, co-ordinating implementation of the overall action plan expressed in the Edinburgh Declaration, promoting the development of arrangements to support change at regional, national and institutional levels, and co-ordinating the monitoring of such changes.

WFME and WHO, in their co-ordinating function, will invite and encourage participation from other interested parties. This is in appreciation of the strengths that lie in them, and also in recognition that WFME and WHO will not always have the strongest or most relevant experience and expertise for dealing with a particular situation or set of problems. This openness for collaboration will help to avoid duplication of existing efforts, and contribute to complementary actions so as to promote optimal use of available resources, interest and commitment. An important principle is to promote coherence of action through collaboration and not fragmentation through independent pluralism.

Coherence of action through collaboration; not fragmentation through independent pluralism.

At the Regional Level

1. Disseminate information relating to the World Conference and the Edinburgh Declaration.
2. Facilitate and support ministerial meetings in each region.
3. Facilitate and encourage meetings with deans of medical schools, directors of health services and other appropriate parties.
4. Facilitate meetings with WHO, UNESCO and other appropriate international agencies.
5. Extend an invitation to other interested organizations, agencies, networks and individuals, including medical students and other health professionals, to indicate the ways in which they could participate in this international collaborative effort.
6. In close consultation with interested parties, formulate regional organizational frameworks for effective constructive involvement of all who wish to participate.
7. Review and up-date regional plans of action including: initiatives undertaken, countries and institutions involved, parties responsible and time frames.
8. Establish mechanisms for monitoring initiatives and reporting back to interested parties.
9. Explore interests and potential for inter-regional collaboration.
10. Seek financial support for Regional Programme.

In close consultation with interested parties, formulate regional organizational frameworks to make the best use of the constructive involvement of all who wish to participate in this effort.

At the National Level

1. Disseminate information relating to the World Conference and the Declaration of Edinburgh.
2. Facilitate and encourage meetings with deans of medical schools, directors of health services and other appropriate parties.
3. Extend an invitation to other interested organizations, agencies, networks and individuals, including medical students and other health professionals, to indicate the ways in which they could participate in this international collaborative effort.
4. In close consultation with interested parties, formulate national organizational frameworks for effective constructive involvement of all who wish to participate.

5. Review and up-date or initiate formulation of plans of action, including: initiatives to be undertaken, institutions involved, parties responsible, and time frames.
6. Establish mechanisms for monitoring initiatives and reporting back to interested parties.
7. Explore interests and potential for inter-country collaboration.
8. Seek financial support for National Programme.

At the Institutional Level

1. Disseminate information relating to the World Conference and the Edinburgh Declaration.
2. Facilitate and encourage meetings with deans, teaching staff and students of medical schools, and directors of health services and other appropriate parties.
3. Review and up-date or initiate formulation of plans of action, including: initiatives undertaken, institutions involved, parties responsible, and time frames.
4. In close consultation with interested parties, formulate institutional organizational framework for effective constructive involvement of all who wish to participate.
5. Establish mechanisms for monitoring initiatives and reporting back to interested parties.
6. Explore interests and potential for inter-institutional collaboration.
7. Seek financial support for Institutional Programme.

THE LARGER TASK

With the closing of the World Conference on Medical Education, a critical chapter in the story of promoting global reorientation in medical education ended. But another chapter began. The four years of preparatory work at institutional, national, regional and global levels have now crystallized into fresh conceptual, organizational and programmatic forms that reflect an evolution from earlier forms.

The strategy of a step-wise process leading to Regional Meetings and the World Conference, now achieved, is being replaced by the International Collaborative Programme for Reorientation of Medical Education. The Planning Commission, which had guided the process over the four year period, will now give way to new forms of programmatic governance. Each Region will now further elaborate and implement its Regional Plan of Action. The financing of WFME and the various national and regional meetings will evolve into a Budget for the Programme.

WFME has a Constitution under which it has a mandate that is broader than the Programme now being formed. Accordingly, the organizational structures should take into account both the broad mandate of WFME and the specific entity of the Programme. The organizational frameworks at each level need to provide coherence among the several participating groups, while also allowing an openness that will encourage collaboration and minimize duplications.

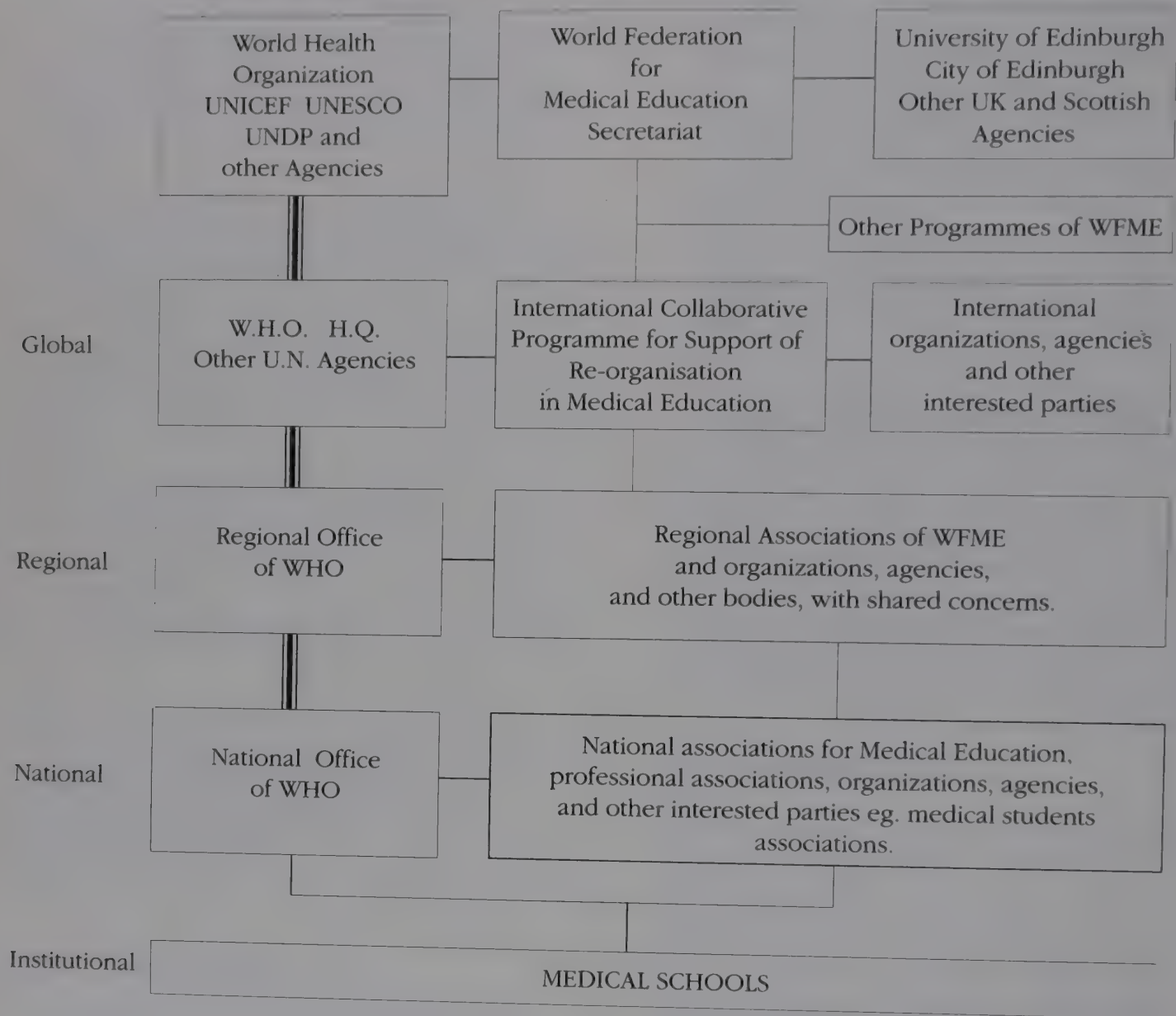
The interactions among the large range of organizations and institutions, not all of which have yet been specified, will now find more concrete organizational form (see following diagram). At this time it is appropriate to indicate general relationships. More specific organizational frameworks and relationships will have to be worked out at each level.

Ahead remains the larger task—to move beyond concepts and plans for action to implementation, and therein to grapple with the actual steps of reform, to construct a global support system for institutions that are engaged in the change process, to link with them in an interactive way so that their daily problems direct practical response from the Programme.

Relevance between medical education and the needs of society is a crucial concept, for medicine fails where it does not best serve humanity. This Programme—to support the necessary reorientation of medical education—has the opportunity to strengthen the capacity of medicine worldwide to respond to this mandate. The prospects must be good, since those who have created the opportunity—leaders responsible for medical education from around the world—are also those who are ready to take the next steps of bringing their vision to reality.

AN ORGANIZATIONAL FRAMEWORK

WFME IN RELATION TO WHO AND OTHER PARTIES AT VARIOUS LEVELS



KEYNOTE ADDRESSES

PROFESSOR HENRY WALTON

Chairman, and President of the World Federation for Medical Education.

Professor Walton said that it was a pleasure to him to be able to say that he knew personally almost everyone present in the room - many of them quite intimately, because he had worked with them in their own countries, and at regional conferences. Now with this opportunity to come together at global level it was with joy that he welcomed the delegates to Edinburgh, for many had said that the World Conference would never occur; if it had failed to do so there were those who thought that there would have to be a wait of another generation before a similar global effort was made in the field of medical educational reform. He looked on this Conference as the middle of the journey, for as those present all realised the World Conference was to be followed by action - the crucial implementation phase.

Mr. IAN LANG, MP

Minister of State, Scottish Office, The Government of the United Kingdom.

Mr. Lang said that it was a privilege to welcome such a large and distinguished gathering, and particularly to welcome Dr. Hiroshi Nakajima, newly appointed to the onerous post of Secretary General of the World Health Organisation, and to welcome also Mr. James Grant, Executive Director of UNICEF.

He agreed with an Interdepartmental Committee of 1944 which had said that the essential foundation of a comprehensive health service was a properly planned and carefully conducted medical education. He felt that Scotland, despite being a small country, was an appropriate choice for the Conference because of its four medical schools. Aberdeen was the first in the medical field with a teaching post established in 1497; it was to be followed by the foundation of the Royal College of Surgeons of Edinburgh in 1505, the Royal Faculty of Physicians and Surgeons of Glasgow in 1599 and the Royal College of Physicians of Edinburgh in 1681. The University of Edinburgh, which had recently celebrated its 250th. anniversary, was in large part the inspiration of a celebrated former Lord Provost of the city. All this he said showed how much could be achieved by drive and determination when the right conditions and the right level of support were present. He considered that Professor Walton had been the driving force behind the setting up of the conference, and that it had been largely as a result of his personal endeavours that Edinburgh had been chosen for its meeting. He wished the conference well in their deliberations.

DR. HIROSHI NAKAJIMA

Director-General of the World Health Organization (WHO).

Dr Hiroshi Nakajima, challenged the medical profession to update the training of doctors so as to fit them more appropriately for the great public health problems of the 21st century.

He posed the question: "Since it takes some ten years to prepare a medical practitioner, have we anticipated sufficiently the nature of health care in the 'Brave New World' that will be their workplace? Have we dared to think the unthinkable or have we merely repeated the clichés?"

Dr Nakajima went on: "There has been a lack of willingness on our part to delegate functions to other health professionals. I recall too well situations in some countries where even highly qualified nurses were not allowed to give intramuscular injections. Sad to say, the only reasons for this proscription seemed to have been due to the fact that there was a fee paid to the person injecting. Perhaps it is now time to rationalize the functions of doctors so that their skills and time are devoted to the special tasks which they have been trained to perform".

Dr Nakajima commented that the World Federation for Medical Education, as the international body which is most closely identified with the preparation of doctors, has in the past drawn attention to the paradox of a great dearth of doctors in many rural areas of the developing world, while many cities have an over-supply of them - to the point where scores of thousands of young doctors are emerging from medical schools only to find there are no jobs available for them.

"It is reasonable to demand that a graduate return to a general practice setting and address mainly preventive priorities when his training has been in a totally different milieu?" Observing that the preparation of a doctor is a long and arduous task, he said: "Unless steps are taken very soon to introduce changes, how will the profession play its rôle towards the attainment of Health For All By the Year 2000? And our obligation is not only to the sick but in fact to the whole community. Yet it is a fact that, unless the medical profession is totally committed, we shall fail to achieve it... We have seen in some countries that change could be imposed on the profession from outside. How much better it would be if we do it ourselves and protect the integrity of our profession?"

WHO's Director-General added a warning that "technological excellence must not be an end to itself for the medical profession." Quoting a medical textbook that he himself had used long ago which

described the role of the physician "to cure sometimes, to relieve often, to comfort always," he told the audience: "Perhaps as educators we have failed to inculcate the spiritual side of medical education in our students, either by word or by example."

Mr. JAMES GRANT

Executive Director of the United Nations Children's Fund (UNICEF).

Dr. Grant quoted his father's comment of 50 years ago that the most urgent problem facing the health community was the lag between modern knowledge and its use in the setting of the community. Although his father recognised the universities as the principal instruments for the application of new knowledge they had failed to discharge their responsibilities in transmitting effective scientifically based community health care. This lag in the application of modern knowledge was largely responsible for the fact that 50,000 people, two thirds of them children, died each day from readily preventable diseases. The critical question remained as to whether medical education will make the dramatic course corrections now clearly required and identified. Four million children will have died in 1988 as a consequence of diarrhoea, much of which could have been prevented by the application of well understood public health measures, and many of whom could have been saved by effective low cost rehydration therapy; this represents one aspect of the scope of the challenge.

Still, in most institutions, less than 1 per cent of medical education is devoted to subjects such as community health and broadscale health education. "Is that what the corporate medical community has decided - that medical education does not include health education as a significant concern?" he asked, and he quoted Dr. Nakajima, who in his inaugural statement the previous month said that the priority was "a restructuring of the international conscience, accompanied by a redistribution of resources".

Medicine has to reach the unreached. "The new potential arises from one of the the most basic, and yet least acted-upon facts about human health in our times - the fact that almost all the major threats to human life and well-being are, at this point, more susceptible to informed action by individuals than they are to further medical breakthroughs or even increased professional services, important as these may be. Almost without exception the major health threats of today can be most effectively combatted by changes in human knowledge and behaviour".

He described the "Grand Alliance for Children", comprised of a vast army of professional groups, which has had often to act without - or even in spite of - the medical educational system.

He reminded his listeners that the word "doctor" is derived from the Latin word "docere" - to teach. He

insisted that doctors must to a greater extent reassume this teaching rôle as a major contribution toward relieving ignorance, and as to how to prevent unnecessary death, particularly among children. He also described the imminent publication by UNICEF of "Facts for Life" which would teach parents in an understandable way about the essential measures already available for preserving the health of their children.

He commented favourably on many of the measures advocated in the document prepared for the conference, and of the need to foster skills in treating the whole population, and said that in the 1990's any medical school without a teaching district in the community would be abrogating its responsibility not only to society but also to the doctors which it trains. He indicated that he liked to be optimistic, but noted that normally severe crises are required to provide the necessary energy to overcome the inertia of prevailing policies, and asked "Is the medical community wise enough to make the hard choices now which would ensure its continuing leadership rôle in society's health in the 21st. century - or will inertia compel an underserved society to take health into other hands? . . . Today the challenge is whether every doctor and everyone involved in the the healing professions can also be, at least equally, an educator - 'one who teaches' . . a 'doctor' in the truest sense."

Dr. MARCO ANTONIO DIAS

Director, Division of Higher Education , UNESCO.

Dr. Diaz began by confirming the great significance attached to UNESCO participation in the future activities of the World Federation for Medical Education by the Director General, Dr. Federico Mayor, on whose behalf he was speaking. He also acknowledged the role in medical education of the World Health Organisation, with whose consent UNESCO was represented at the conference.

The reasons for the involvement of UNESCO were closely related to the mobilisation of entire universities resources for health in their communities, and for this purpose the participation of Ministers of Education at national level, and of UNESCO at international level, were very important. Professor Walton had insisted in his contacts with UNESCO that health education, prevention, and responsibility of citizens for their own health are fully as important as tertiary, hospital-bound curative medicine (in mainly urban areas) which had been the priority of medical education in the past. This approach explained and justified the implication of UNESCO in collaboration with WHO and UNICEF in the implementation of WFME activities.

He went on: "It seems to me important to include in this analysis of health education the cultural approach. Culture, as defined by an anthropologist is 'that complex whole which includes knowledge,

belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society'. How many of you could tell us of failures, of lack of success of health campaigns due exclusively to the fact that cultural aspects were not taken into consideration! . . . With this approach UNESCO will - I have no doubt - be able to participate with WHO and UNICEF in the implementation of your activities. I think also that the fact that health is seen in a broader way concerning not only the medical schools, but all fields of knowledge, including the social and human sciences, will facilitate UNESCO's involvement."

He said that the Director General had convened a meeting of all non-governmental organizations specialising in higher education, to be held in Paris in October 1988 to consider the topic "Higher Education: problems and challenges for the future." He considered that the participation at this meeting, at least as an active observer, of the World Federation for Medical Education would be welcomed and useful for strengthening the new co-operation with UNESCO. It would be a good occasion to reinforce the statements in favour of any action concerning health education and education for health.

"Looking at the six themes you wish to develop as a way for changing the nature of medical education," he continued, "I got the impression that we cannot 'not co-operate'. UNESCO has recently developed a special programme called 'Action with a view to better integration of training and research activities', and the objectives of this programme are close to many of the actions foreseen in your six themes. . .

. . . I was very pleased to read in the introduction to your conference document that 'there is growing concern in developed and developing nations alike that the discrepancy between potentially available and actually delivered health service is becoming intolerably great, at least for substantial segments of the population'. The democratisation of health among populations and nations can become a solid foundation for international cooperation, and with this aim UNESCO will contribute to the actions developed by WHO, UNICEF and the World Federation for Medical Education."

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